



ARMY GROUND RISK MANAGEMENT INFORMATION

# Countermeasure

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# COLD Weather SAFETY



# Countermeasure

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## The Basics of Accident Prevention

**E**xecuting our missions in support of Operation Enduring Freedom requires a high state of readiness that, in turn, makes it even more imperative that we not allow accidents to degrade our ability to accomplish those missions.

Everyday we expose our soldiers to hazards in uncertain and complex operational and training environments. Increased mission optempo, leader inexperience, and constant changes with personnel resource issues in terms of time, equipment, etc., are all present. None of these elements alone are the inherent cause of accidents. However, when left uncontrolled, seemingly low-risk hazards can collectively raise risk to an unacceptable level. The cumulative effect of these risks could create breakdowns in leadership, discipline, training, and standards, which in turn can quickly set the accident chain of events in motion.

In fact, an analysis of FY02 Class A accidents reveals that breakdowns in discipline, leadership, training, and standards were the main contributing causes of these accidents. Data also supports that, in many cases, the accident didn't just happen on the day of the helicopter crash or the tank rollover. Sometimes the sequence of events that culminated in the accident started days, weeks, and even months before—and not always at the accident unit level.

If we understand what is causing our accidents, the logical follow-on question is, “How do we prevent them?” The preventive answer doesn't lie in the development of some new program with a catchy slogan. The answer lies in what I call “the basics.” As I've stated many times, my personal belief is that **“Units that participate in tough, well-disciplined training—with technically and tactically competent leaders present—have significantly fewer accidents.”** Today, I'm more convinced than ever that leadership (theater, corps, division, brigade, battalion, and company) involvement while executing aggressive, realistic training and real-world missions—combined with effective risk management and strict enforcement of discipline and adherence to standards—are the primary tools that can prevent accidents and save lives.

Our great Army is built on a tradition of discipline and clearly defined standards. Good leaders who are responsible and accountable have no trouble enforcing either. Risk management is the bedrock of our safety culture. Good leaders not only enforce discipline and standards, they understand and apply risk management effectively—and they ensure the soldiers in their command can do so as well.

Risk management is the tool that helps us identify hazards and reduce risks to our soldiers, thus allowing us to successfully operate in high-risk environments with minimal losses. For maximum effectiveness, it has to be a closed-loop, cyclic five-step process: identify hazards, assess hazards, make the right risk decisions, put controls in place, and supervise. The process must start with planning and continue throughout execution and the after-action reviews.

As an Army, we are fully engaged in prosecuting this war on terrorism and, at the same time, continuing to transform our Army into a more agile, lethal, and deployable force. Recently signed by the Secretary of the Army and Chief of Staff of the Army, the Army Safety Strategic Plan (<http://safety.army.mil/StrategicPlan2002.PDF>) is our roadmap for ensuring that, in conjunction with transforming our Army, we are **safely** transforming our Army by fully integrating risk management and safety into each of the 14 lines of operation within the Army Transformation Campaign Plan.

From the Army strategic level to the individual level, risk management is the accepted process for preventing accidents. On the individual level, I challenge all of you—every soldier and civilian alike—to make a renewed personal commitment to thoroughly understand and practice risk management until it becomes intuitive. Risk management is probably the most important five-step process that any of us will ever learn. Embrace it and practice applying the entire process in everything you do, both on and off duty. The more you practice risk management, the easier it becomes.



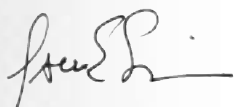
Risk management is a solid accident prevention program. It affords us the capability to conduct those tough, realistic training missions that replicate combat conditions while minimizing losses due to accidents. It is incumbent upon each of us to apply the process to all that we do and execute every mission to the risk management standard—an informed decision at the appropriate level.

I recognize that there is some concern that junior officers and NCOs lack experience in the application of risk management. We are currently working with TRADOC to ensure we have embedded risk management education from pre-commissioning through the Division Commander's Course, and to make certain that we have embedded appropriate levels of risk management education and training in NCOES from PLDC through the Sergeants Major Academy.

If you need help in the form of risk management training at the unit or MACOM level in integrating risk management into operational plans to execute the objectives within the Army Safety Strategic Plan, the Safety Center team is standing by to assist. Contact our risk management mobile training team at DSN 558-9854/3790 (334-255-9854/3790) or our Army Safety Strategic Plan coordination team at DSN 558-3367 (334-255-3367).

Any failure to manage risks at either the strategic, operational, tactical, or individual level could well result in a much higher price than we are willing to pay. The payoff of doing it right will be accidents avoided and lives saved. ★

**Train Hard, Be Safe!**  
**BG James E. Simmons**



## COVER STORY

# Cold Weather Know the Threat!

**I**f you don't know the threat, you really can't fight the battle well. The threat of cold weather is no exception; many generals have lost the battle of the cold. Napoleon learned this in 1812 when, during his retreat from Russia, he lost 250,000 soldiers as a result of the cold. In the Crimean War (1852-1856), 5,215 French soldiers succumbed to the cold, and 1,178 died. During the same war at the Battle of Sevastopol, 2,800 British soldiers suffered horrible cold weather injuries, and 900 of those died.

Things didn't get much better early in the 20<sup>th</sup> Century. During World War I, the British had 115,000 cases of all types of cold injuries. During the Dardanelles campaign, the British sustained 14,500 cold weather casualties. In World War II, the Germans failed to learn from Napoleon. On the eastern front between December 1941 and January 1942, 100,000 German soldiers suffered frostbite, resulting in 15,000 amputations.

The U.S. Army has not been immune to the cold, either. During World War II, records show 46,000 cold injuries in the European theater from autumn 1944 to spring 1945. In the Korean War, it is estimated that nearly 10 percent of all wounds were related to cold injuries.

The good news is that we learned valuable lessons from those incidents. Today we have better equipment and training: cold injuries, even during initial deployment to places like Bosnia and Kosovo, are rare indeed. However, they will stay rare only if you know the threat.

That's when a leader's job of protecting soldiers gets tougher. Leaders must watch for early signs of cold stress in their soldiers. The most dangerous of these threats are shown in the chart on page 6.

### Plan for the cold

The most important element of cold protection is planning for the cold. Ensure that you have accurate weather information for the area and time of the mission. Be particularly aware of rain, snow, and winds (wet conditions and windchill greatly increase the chance of injury). Ensure soldiers have appropriate cold weather clothing.





If the tactical situation permits, use covered vehicles for troop transport. Have warming tents or areas available, if possible. Have warm drinks and food on hand.

### **Wear the right clothes the right way**

The most important individual preventive measure is the proper wearing of cold weather clothing and boots. Some soldiers think wearing every article of cold weather clothing issued is the way to go. Wrong!

This can cause overheating and dehydration or restrict circulation in the extremities, which can increase the risk of frostbite. All cold weather clothing should be worn loose and in layers; this allows for insulation by air trapped between the layers. Socks should be changed frequently and boots rotated.

Proper wear of boots is important. You don't wear jungle boots in the snow, and you shouldn't wear intermediate cold weather boots (Gore-Tex™ lined, like Matterhorn™ boots) indoors and out, year-round. Wet or damp boots need to be dried with warm air whenever possible. If boots are removed at night and moisture in them freezes, it can be just like sticking your feet in ice cubes the next day—a perfect setup for a cold injury.

It is important to keep clothing clean and dry. Dirt, oil, or water can increase the rate of heat loss by reducing the insulation ability of the clothes. It is also important to keep clothing repaired—a broken zipper cannot keep the cold out. Headgear is extremely important; the body can lose large amounts of heat through the head.

It is also important to protect hands and fingers by wearing proper gloves. Nomex™ aviator gloves may be light and flexible and look cool, but they are designed to protect from fires, not extreme cold, and will do little to protect your hands when they are wet. Unless specifically authorized, they should not be worn.

### **Other contributing factors and prevention techniques**

By knowing some of the other factors that

contribute to or prevent cold injury, you can further protect yourself.

- **Previous cold injuries.** Soldiers with previous cold injuries are more susceptible to another one. These soldiers must be identified, and first-line supervisors should monitor them closely.

- **Tobacco.** Nicotine, regardless if it comes from a cigarette, snuff, pipe, or cigar, causes blood vessels to constrict. This is particularly dangerous in the hands and feet and can lead to or worsen a cold injury.

- **Alcohol and caffeine.** These substances can lead to increased urination and subsequent dehydration.

- **Meals.** If you skip meals, the first thing the body does is slow the metabolism. Slower metabolism means less heat production and an increased chance of cold injury.

- **Activity.** Huddling up and not moving is the wrong thing to do. The more you move, the more heat you produce. Decreased activity decreases the time it takes to get an injury.

- **Buddy system.** The buddy system is a great way to help prevent injuries, if soldiers are trained to know what to look for.

- **Self-checks.** A simple self-check is to pinch a fingernail and watch how fast the blood returns to your finger. The slower the return, the higher the potential for a cold injury to the fingers or toes.

- **Other information.** More information on cold injuries can be found in Field Manual (FM) 21-10, *Field Hygiene and Sanitation*; FM 21-11, *First Aid for Soldiers*; Graphic Training Aid (GTA) 5-8-12 (this is a good pocket guide for soldiers); Technical Note 92-2, *Sustaining Health and Performance in the Cold: Environmental Medicine Guidance for Cold-Weather Operations*, published by the U.S. Army Research Institute of Environmental Medicine; and FM 21-76, *Survival*.

### **Prevention is key**

All cold weather injuries are preventable! Prevention is the responsibility of leaders at all levels, as well as the individual soldier. We have learned the lessons of unpreparedness from soldiers who have gone before us. Cold injuries are always a threat in cold environments; however, only by proper planning and training for cold weather operations can we beat them. 🐻

Reprint from September 2001 Countermeasure



# Cold Weather Injuries Chart

## Dehydration

- Cause**
- Depletion of body fluids.
- Symptoms**
- Dizziness.
  - Weakness.
  - Blurred vision.
- First Aid**
- Replace lost water. Water should be sipped, not gulped.
  - Get medical treatment.

## Chilblain

- Cause**
- Repeated exposure of bare skin for prolonged periods to temperatures from 20 to 60°F (for those not acclimated to cold weather).
- Symptoms**
- Swollen, red skin (or darkening of the skin in dark-skinned soldiers).
  - Tender, hot skin, usually accompanied by itching.
- First Aid**
- Warm affected area with direct body heat.
  - Do not massage or rub affected areas.
  - Do not wet the area or rub it with snow or ice.
  - Do not expose affected area to open fire, stove, or any other intense heat source.

## Immersion Foot (Trench Foot)

- Cause**
- Prolonged exposure of feet to wet conditions at temperatures between 32 and 60°F. Inactivity and damp socks and boots (or tightly laced boots that impair circulation) speed onset and severity.
- Symptoms**
- Cold, numb feet may progress to hot with shooting pains.
  - Swelling, redness, and bleeding.
- First Aid**
- If you suspect trench foot, **get medical help immediately.**
  - Rewarm feet by exposing them to warm air.
  - Evacuate victim to a medical facility.
  - Do not massage, rub, moisten, or expose affected area to extreme heat.

## Frostbite

- Cause**
- Freezing of tissue, normally due to exposure below 32°F. Parts most often affected include fingers, toes, ears, and other facial parts.
  - Exposure to bare skin on metal, extremely cool petroleum, oil, and lubricants (POL), wind chill, and tight clothing—particularly boots—can make the problem worse.
- Symptoms**
- Numbness in affected area.
  - Tingling, blistered, swollen, or tender areas.
  - Pale, yellowish, waxy-looking skin (grayish in dark-skinned soldiers).
  - Frozen tissue that feels wooden to the touch.
- First Aid**
- **Frostbite is a medical emergency! Consult medical personnel immediately and evacuate the victim as soon as possible. If not treated properly, frostbite can lead to gangrene and amputation.**
  - Start first aid immediately. Warm affected area with direct body heat.
  - Do not thaw frozen areas if treatment will be delayed.
  - Do not massage or rub affected areas.
  - Do not wet the area or rub it with snow or ice.
  - Do not expose affected area to open fire, stove, or any other intense heat source.

## Hypothermia

- Cause**
- Prolonged cold exposure and body-heat loss. May occur at temperatures well above freezing, especially when a person is immersed in water.
- Symptoms**
- Lack of shivering.
  - Drowsiness, mental slowness, and lack of coordination. Can progress to unconsciousness, irregular heartbeat, and death.
- First Aid**
- **This is the most serious cold exposure medical emergency and can lead to death! Get the soldier to a medical facility as soon as possible.**
  - **Never assume someone is dead; victims with temperatures as low as 82°F have been revived. In extreme cases, the pulse and breathing can be so low as to be nearly undetectable.**
  - Strip off wet clothing and wrap victim in blankets or a sleeping bag.
  - Place another person in sleeping bag as an additional heat source.



# Winter Driving: *Are You Ready?*

**W**inter driving can be inconvenient, annoying, even infuriating, but most of all—DANGEROUS! Winter is the most difficult driving season. Not only do you have snow and ice to deal with, but there are fewer hours of daylight as well. However, you can offset those aggravations and minimize the special risks of winter driving by following a few simple steps and taking certain precautions before and during driving.

## Getting started: pre-check

Here are some routine precautions to help you avoid starting problems:

- Get an engine tune-up in the fall.
- Switch to winter-weight oil if you aren't already using all-season oil.
- Be sure all lights are in good working order.
- Have the brakes adjusted.
- Battery and voltage regulators should be checked.
- Make sure battery connections are good.
- If the battery terminal posts seem to be building a layer of corrosion, clean them with a paste of baking soda and water. Let the paste foam, and then rinse with water. Apply a thin film of petroleum jelly to the terminal posts to prevent corrosion and reconnect.
- Be sure all fluids are at proper levels.
- Antifreeze should not only be strong enough to prevent freezing, but fresh enough to prevent rust.
- Make sure wiper blades are cleaning properly. Consider changing to winter wiper blades, which are made for driving in snow. Winter blades are covered with a rubber boot to keep moisture away from working parts of the blade.

## Equipment and supplies

Here's what you'll want to have on hand, especially in an emergency:

- Snow shovel
- Scraper with a brush on one end
- Tow chain or strap
- Tire chains
- Flashlight (with extra batteries)
- Abrasive material (cat litter, sand, salt, or traction mats)
- Jumper cables
- Warning device (flares or reflective triangles)
- Brightly colored cloth to signal for help
- Empty coffee or similar type can containing candles, matches (in a watertight container) or lighter, and high-energy food (e.g., dried fruit)

## Driving

- Before winter weather arrives, make sure your vehicle is in good condition, especially the tires.
- Make sure you've got good snow tires, and put them on early. Try not to get caught without them in the first snowfall. Never combine radial and non-radial tires on the same vehicle. It's best to put snow tires or all-season tires on all four wheels, not just the front.
- If you must drive, clear the ice and snow from your vehicle, including all windows and the windshield wipers. Be sure the windshield washer reservoir is adequately filled with a freeze-resistant cleaning solution.
- Plan your route.
- Be familiar with maps and directions to avoid confusion.
- Check weather reports and adjust starting times accordingly.
- Let others know what your route will be and give an estimated arrival time.
- Always fill the gasoline tank before entering open country, even for a short distance, and stop to fill up long before the tank begins to run low. Keeping the gas tank as full as possible will minimize condensation, providing the maximum advantage in case of trouble.
- A citizens band (CB) radio and/or cellular phone can be very useful to you or another stranded motorist in case of an emergency. Remember, pull off the road to talk on a cellular phone.
- In heavy snow, keep your low beams on, as well as fog lights (if available).
- **Drive slowly!** Even if your vehicle has good traction in ice and snow, other drivers will be traveling cautiously. Don't disrupt the flow of traffic by driving faster than everyone else. Remember how far it takes to bring your car to a stop on dry pavement? In winter conditions, allow at least three times that distance to reach a full stop and avoid skidding. This means your safe distance behind the car in front of you should be three times as far as in dry weather, and you must begin braking three times as far away from the stoplight or corner where you turn. In a rear-wheel drive vehicle, you can usually feel a loss of traction or the beginning of a skid. However, there may be no such warning in a front-wheel drive vehicle.

## Skids

Despite a popular misconception, the best approach to recovering from a skid is the same for both front- and rear-wheel drive vehicles.

### **If your vehicle wheels start to skid:**

- Recovering from a rear-wheel skid: in a rear-wheel skid, the front wheels are heading into the turn, but the rear wheels are continuing in their original direction, which means that the rear end of the vehicle is quickly catching up with the front end. You need to keep the front wheels ahead of the rear wheels and, to do this, you have to reverse the actions that initiated the skid—reduce speed by lifting your foot off the accelerator, and un-turn your steering wheel. The easiest and most natural way to do this is to look in the direction you want to go and gently steer towards it.

- Recovering from a front-wheel skid: in a front-wheel skid, the front wheels are turned but are continuing in their original direction, and the rear wheels are only along for the ride. When an under steer occurs, the natural tendency is to turn the steering wheel more, but it was turning that created the problem in the first place. What you need to do is get the front wheels rotating in the same direction as they are traveling. To do this, you must reduce speed by lifting your foot gently off the accelerator and straighten the front wheels, actually turning away from where you want to go and towards the direction you are skidding. There is no easy or natural way to do this. By simply reducing speed, some of the weight of the car will be transferred to the front tires, which will serve to increase their grip on the road surface and straighten out the front wheels, which will be inclined to start rotating in the direction they are traveling.

- If your car has an antilock braking system (ABS), keep your foot on the pedal. If not, pump the pedal gently, pumping more rapidly as your car decelerates.

Braking hard with non-antilock brakes will make the skid worse.

To avoid skids, brake carefully and gently on snow or ice. Squeeze your brakes in slow, steady strokes. If your vehicle has ABS, do not pump the brakes; instead, apply a steady pressure and allow the wheels to keep rolling. If your brakes start to lock, ease off the brake pedal. As you slow down, you may also want to shift into a lower gear.

When sleet, freezing rain, or snow starts to fall, remember that bridges, ramps, and overpasses are likely to freeze first. Also be aware that slippery spots could still remain after road crews have cleared the highways.

### **Getting unstuck**

If you should find yourself stuck, here's what to do:

- Turn your wheels from side to side a few times to push snow out of the way. Keep a light touch on the gas and ease forward.

- Don't spin your wheels—you'll just dig in deeper.

- Rocking the vehicle is another option, but be sure to check your owner's manual first; rocking can damage the transmission on some vehicles.

- Shift from forward to reverse and back again.

Each time you are in gear, give a light touch on the gas until the vehicle gets going.

- For front-wheel drive vehicles, snow tires should be on the front—the driving axle—for better traction in mud or snow.

### **If you get stranded...**

You may feel helpless, stuck in the snow in a lonely

## **GETTING THINGS STARTED IN COLD WEATHER**

**A**s most of us know, operating in cold weather can bring many challenges.

Things as simple as preventing drinking water from freezing in the field and protecting soldiers from cold weather injuries can prove trying in harsh winter conditions.

What about our equipment? Are there different procedures for operations in a cold weather environment? As a maintenance officer, I can tell you operating in the cold does present numerous opportunities

for mission failure because of equipment damage or personnel injuries. But as a safety officer, the scope and hazards can and will be much larger.

When operating equipment in extreme climates, be it an aircraft or a vehicle, the operator's manual will have specific procedures to follow. On the aviation side, it's a good idea to stay on the auxiliary power unit with the heat on, allowing the black boxes to warm up a little before hitting them with a

power surge. After all, when we roll out of the sleeping bag on a cold morning, it takes us standing around the stove and a few cups of coffee to get started. Just remember, give those systems that electric cup of joe before asking them perform.

Well, the systems are now up and running and ready to go—right? Wrong! Yes, we have done the right thing with our electronic systems. Now what about the mechanical systems? Transmissions, gearboxes, even tires need to be warm



place, but there are things you can do to survive until help reaches you.

- Stay in the vehicle.
- Don't wander—you could get lost or frostbitten.
- Run the engine for heat about once every hour, or every half-hour in severe cold.
- Clean snow from around the end of your car's tailpipe to prevent carbon monoxide buildup.
- For extra heat, burn a candle inside a coffee can, but don't set the can on fabric.
- Make sure the vehicle is NOT airtight by cracking a window, and leave one window cracked open.
- Clear outside heater vents (the grill under the windshield).
- Avoid alcohol—it lowers body temperature and causes drowsiness.
- Remember that freezing winds and driving, wet snow can quickly seal a vehicle.
- Signal to other motorists that you're stranded by using flares or flashlights, or by tying a piece of brightly colored cloth to the radio antenna.

## Ice


Expect icy conditions any time the outside air temperature reaches 40 degrees F or lower. Although water freezes at 32 degrees F, road surfaces can freeze when the air temperature drops to 40 degrees or less. An important place to watch for this condition is on bridges. Bridge surfaces are exposed to the wind and cool off faster than the rest of the road. You should also prepare for icy conditions on roads through shaded areas, where a cold wind can freeze a wet road surface.

## White ice

Snow that has been compacted during the day and melted slightly will freeze at night. Usually this white ice can be seen on the road. When traveling on white ice, drive very slowly. If you cannot find a place to park until conditions improve, install tire chains for better traction.

## Black ice

Black ice (clear water that has frozen on black pavement) usually forms below overpasses, on bridges, in areas that are surrounded by landscape, or on a source of water running across pavement. Black ice commonly occurs in low, shaded areas and/or when the road surface starts to freeze at night. You usually cannot see or feel this ice until your vehicle is already on it, and you may not expect a patch of ice because you've been driving on dry, clear pavement. Black ice can be found in an area where melting snow or a roadside spring caused water to run onto the road and freeze. If you are not aware that the water has frozen, you could lose control and the vehicle could skid.

Winter driving requires motorists to be extra careful and alert, but the most important tip for winter driving is **SLOW DOWN!** Always give yourself plenty of time to get where you are going, and get off the road before you get stranded by worsening weather conditions. 


Adapted from the Safety Division, Fort Bragg Public Safety Business Center website, <http://www.bragg.army.mil/safety/winter>

before we ask for 100% from them. Transmissions and gearboxes are lubricated by either oil or grease. Both of these lubricants can be affected by temperature, and in cold weather they tend to thicken. We know that thicker fluid means higher pressure on seals. In maintenance lingo, that means lots of blown seals. Tires, for those of you from the southern regions, will sometimes get flat spots after sitting in the cold for a while.

Now, let's talk about our most important resource: people. Getting soldiers to work in cold climates is a

challenge too, but it's also a very big responsibility. Call it tricks of the trade or just plain old experience. Take an active role in caring for your soldiers. Small things like hot coffee and soup go a long way. Make sure soldiers are dressed for the environment. Poly-pro may be okay for walking around for short periods of time, but it is not the correct PPE for launching an aircraft or working on a vehicle for long periods of time.

The bottom line is that, as leaders, we are responsible for our equipment and soldiers. Use risk management and

other tools to help keep from becoming a statistic. Think of it this way: by doing little things like taking care of the equipment (let it warm up before we ask it to perform), our soldiers don't have to be out in the cold fixing equipment because someone else didn't adhere to **the standard**. 

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An Infantry platoon was conducting collective training related to knocking out bunkers and entering and clearing trenches. The platoon had completed day blank/live fire training and had just finished night blank firing and was starting the night live fire exercise in conjunction with entering and clearing trenches.

Two soldiers crawled to their designated entry point and assumed the correct opposing position on their backs. The soldier designated to throw the live hand grenade initiated the first foot tap, signaling to the other soldier that he had control of the M67 hand grenade. The second soldier acknowledged by returning the "Are you in position and ready?" foot tap; the thrower responded with the "I'm ready" tap and proceeded to remove the safety clip from the grenade and pull the ring. The thrower took two deep breaths as if to calm himself and proceeded to roll onto his right

removing the safety clip, pulling the safety pin, and throwing the grenade within the 4- to 5-second delay time. Bottom line: unit leaders were aware of the hazards but failed to implement controls identified in the risk management worksheet, resulting in the death of a soldier and hospitalization of two others.

Because of the destructive nature of munitions and explosives, all personnel working or using these items must constantly be aware of associated hazards and know how to effectively apply safety controls. Carelessness and unsafe practices can result in injury, illness, or death to personnel, and damage to or loss of equipment and property. In wartime, these factors can seriously disrupt the mission and have a negative impact on the outcome of operations.

Risk management is always critical whether an entire unit, platoon, or squad is operating in a peacetime or combat environment. Soldiers

# AMMUNITIONS

## RISK ASSESSMENT AND MANAGEMENT

shoulder in preparation to throw the grenade. At some point during the throwing sequence the grenade exploded, fatally wounding the thrower. The second soldier received grenade fragments to both legs, and the OC received a fragment to his knee.

The battalion's risk management worksheet listed the use of the M228 practice grenade fuze during the short range training ammunition (SRTA) portion of the exercise to control the hazards associated with handling and throwing live grenades. The battalion's leadership failed to provide M228 fuzes for use during the SRTA. This oversight significantly diminished the training realism of the events by not allowing soldiers to gain experience with handling live grenade fuzes and complete all required steps for arming and throwing grenades with the fuze delay burning,

and leaders at all levels must always be proactive when it comes to safety during day-to-day operations. The importance of safety is further intensified for units and personnel engaged in munitions-related activities. Before engaging in operations involving munitions/explosives, leaders must know how to apply the principles of risk management to the mission at hand.


Risk assessment is the process of identifying hazards and their possible effects or potential outcome. In peacetime, leaders learn to assess risks during training exercises. Techniques learned and applied successfully in peacetime training can be used effectively in combat. After carefully evaluating the mission, leaders can take a certain amount of risk in combat that would be unacceptable in peacetime operations.



During the planning phase of any operation, leaders must conduct a task hazard analysis and safety evaluation before writing standing operating procedures (SOPs). This allows for the development and implementation of controls to ensure that operational changes are efficient and effective. Areas to consider during the hazard analysis process are mission, enemy, terrain, troops, and time (METT-T), and the number of personnel involved in the operation. Prior planning reduces the potential for accidents and significantly increases efficiency.

Risk management is the decisionmaking process that, when properly implemented, balances training and operational demands against identified risks. Risk assessment and management need to be integrated fully into the planning and execution process to be effective. Risk management is a closed-loop, five-step process that can be used for any type

5. Enforce control measures through supervision, and continually evaluate them for effectiveness.

**Implementation of the risk assessment and management processes during peacetime operations is an effective force protector and combat multiplier.** 

**POC: Ground Systems and Accident Investigation Division, DSN 558-3562, (334) 255-3562**

# SAFETY

of mission, be it peacetime or combat. The five steps are as follows:

1. Identify all hazards, including those that affect soldiers, equipment, and property.
2. Assess hazards to determine the risks involved and the degree of impact in terms of potential loss and cost. To a degree, assessments are based on probability and severity.
3. Develop control measures that eliminate or reduce hazards and risks, and continually re-evaluate risks until they are reduced to a level where the benefits outweigh the costs.
4. Implement controls that are effective in eliminating hazards and reducing risks.



# Get to Know Your Privately Owned Weapon!

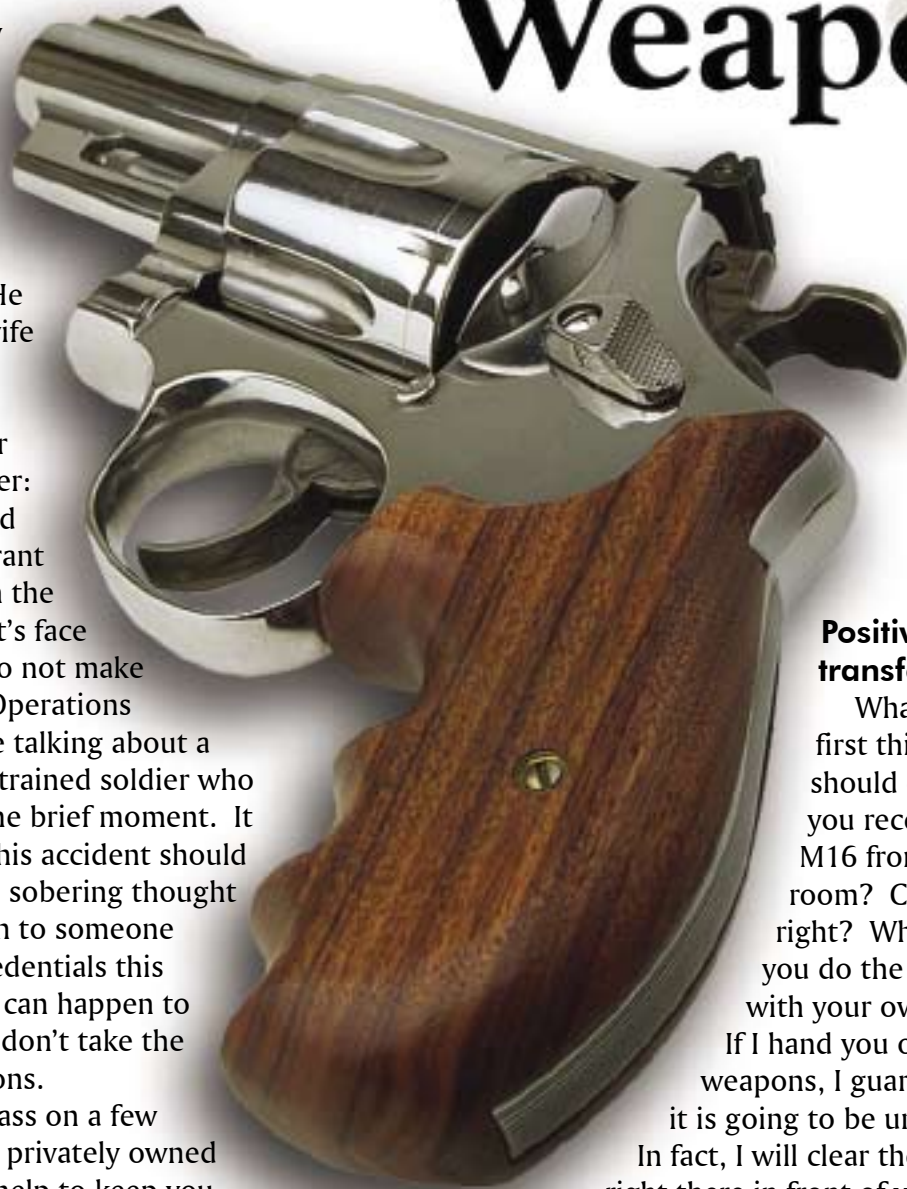
**W**e recently lost a soldier to an accidental gunshot wound sustained while cleaning his .357 Magnum revolver. He is survived by his wife and son.

This was not an inexperienced or untrained gun owner: he was a 41-year-old Special Forces Warrant Officer proficient in the use of firearms. Let's face it—dumb people do not make it into the Special Operations community. We are talking about a highly skilled, well-trained soldier who lost his focus for one brief moment. It cost him his life. This accident should provide us with the sobering thought that if it can happen to someone with the kind of credentials this soldier had, then it can happen to any one of us if we don't take the necessary precautions.

I would like to pass on a few tips in dealing with privately owned weapons that may help to keep you and your family safe.

## **Know the law**

You must become familiar with the federal and state laws that pertain to firearm ownership, and you must know the regulations established by your installation. Pleading ignorance will not keep you from an extended vacation turning big rocks into little rocks. You will find that law enforcement agencies have no sense of humor when it comes to weapons violations. Getting into trouble with your privately owned weapon is not the way you want to meet your Provost Marshal.



## **Positive habit transfer**

What is the first thing you should do when you receive your M16 from the arms room? Clear it, right? Why wouldn't you do the same thing with your own firearm?

If I hand you one of my weapons, I guarantee that it is going to be unloaded.

In fact, I will clear the weapon right there in front of you before

I let you have it, and I still expect you to clear it yourself. It is not a trust issue, it is a *safety* issue.

## **Muzzle control**

Make this a religion. Loaded or unloaded, clear or unclear, do not point your weapon at anything you do not intend to shoot.

## **Got kids?**

I have a 5-year-old son, and trust me when I say that he wants to get into my gun cabinet pretty badly. I suspect your kids are the same. We have the obligation to safeguard our



children. Keep your weapons and ammunition locked in separate areas. Keep a trigger lock on weapons that are not in use. Hiding your weapon will not cut it. Think about when you were a kid. How many times did you find something that your parents did not want you to find? Now think about the devastation caused in a household where a child is hurt or killed in a firearms accident. Don't let it be your child. If you do maintain a weapon for home defense, there are plenty of storage devices on the market to keep the weapon secure. My .45 is kept in a locked and coded storage safe, and I am the only one with the code. However, in the event of a home emergency, I strongly advocate the use of 911. Let professional law enforcement come take care of business.

### Do the research

If you purchase a new firearm, take the time to learn about it. There are a great variety of firearms available on the market and while they tend to be similar in design and function, there still could be something unique to that weapon that you need to know. I own a Mini-14, which is a semi-automatic, magazine-fed rifle that fires 5.56mm. On the surface it sounds an awful lot like an M16 when, in fact, they are two entirely different animals. When I bought it, I had the dealer teach me how to clear, disassemble, reassemble, and perform a functions check. Then I had him instruct me on how to load, unload, and reduce a stoppage. Do any of those terms sound familiar? They should, since they are common tasks for any Army firearm. Why not apply them to your privately owned weapon?

### It is a tool, not a toy

I know the deal. Your buddies come over to the house and you just have to go through your gun cabinet and show them your latest and greatest gun purchase. Resist the temptation. There have been many accidents caused by

visitors handling their host's guns. Would you drag your new power saw out and let your buddy play with that?

### Educate yourself

Most Army installations offer some sort of gun/hunter safety course. If your installation doesn't, you can probably find one off post. Get smart. Just because you can "follow all instructions from the tower" while on the range does not mean that you are necessarily a firearms safety expert. Time spent in the classroom is much better than time spent in the hospital or on a slab. We often get caught in the "I am in the Army and that means I know everything there is to know about every firearm


## Keep Your Focus!

While at a party involving alcohol, a soldier stuck his 9mm pistol into the waistband of his pants. During his return from a trip to the store, the pistol discharged, inflicting penetrating trauma to the soldier's penis, scrotum, and knee.

While extending the bayonet on a military surplus carbine, a soldier inadvertently discharged his weapon, removing the tip of his right thumb and injuring his ring finger.

A soldier was loading equipment into his truck bed in and around a weapon that he had already put in the truck. The weapon discharged, striking the soldier in the thigh.

ever made" trap. Come on. I am retiring soon after more than 20 years in the Infantry. I still ask questions, and I still read the manual whenever I get a new firearm. One of the biggest attributes of being smart is recognizing when you are ignorant. Any reputable dealer should be able to give you minimum safety and maintenance instructions. Some dealers even have an on-site range available and will give you basic firearms instructions subsequent to the sale. Shop around, do the research, and get educated.

The bottom line? Employ your brain-housing group to its fullest ability and maintain your focus. We lost a good man. We don't want to lose you. 

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# Bag One for Safety

**H**unting with a firearm, bow, or other weapon is dangerous under any circumstance, but can be downright deadly when hunters are not well trained or properly prepared. During the 2000 hunting season, a total of 926 hunting-related accidents were reported in the U.S. and Canadian provinces, with 91 of those incidents resulting in fatalities. Fortunately, none of those fatalities were soldiers; however, one soldier lost a finger and another was injured in separate hunting accidents caused by slips.

Keep these tips in mind as you head to the woods this hunting season:

- Begin your hunting experience by taking a firearms safety course available in your area. In some states, these courses are required before you can obtain a hunting license.
- Keep firearms unloaded, and keep the action open until you are hunting. Carry guns in their cases to the shooting area. This is the law in most states.
- Always assume every firearm is loaded and dangerous. Respect it for the harm it can inflict.
- Never take someone else's word that a firearm is not loaded—always check for yourself.
- Never engage in horseplay with a firearm. Guns are deadly business and should be treated in a serious, cautious manner.
- Always point the muzzle in a “safe” direction. A safe direction is one in which, if fired accidentally, a weapon will not cause injury or damage. Never point a gun at anything you do not intend to shoot.
- Be sure the barrel and mechanisms are clear of obstructions. This is best done by looking down the breech end of the weapon, after having cleared the weapon first.
- Be sure you use the proper ammunition for the weapon you are using, and know the maximum range of your ammunition.
- Keep the muzzle of your gun under control and pointed away from yourself and others.
- Be certain the safety is on.
- Keep your fingers outside the trigger guard.

- Clearly identify your target before you shoot. If you are not absolutely sure of your target, do not shoot.

- Know what's beyond your target.

For example, just because you cannot see what's in the distance, do not shoot at an animal standing on the horizon of a hill.

- Never shoot at a sound or a patch of color.

- When a shell does not fire, keep the muzzle pointed in a safe direction for at least 45 seconds, and then remove the cartridge.

- Do not climb fences or trees, cross slippery areas, or jump ditches or creeks while carrying a loaded gun—unload the firearm first. It takes only a few seconds, and it could save someone's life. If you are hunting with a partner, hand your gun to him/her when crossing an obstacle.

- Never pull a firearm toward you by the muzzle.

- Handguns should be carried in a holster.


- Do not shoot at flat, hard surfaces or at water. Bullets will ricochet out of control off these surfaces. Remember, a bullet or shotgun shell is your responsibility from the instant it leaves your gun.

- Be especially careful at the end of the day as you become tired and the firearm you are carrying becomes heavier. Fatigue can make you careless. If you feel tired, stop, unload your weapon, and rest.

- Do not use alcohol, drugs, or medication that could impair your judgment and dull your senses.

- Never pick up unexploded ordnance.

- Follow established policies and procedures on military installations.

- Wear hunter or blaze orange. Most states have laws requiring the wearing of hunter or blaze orange, and also have requirements specifying the minimum amount that must be worn. 

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# The Numbers...Hunting Accident Factors

The tables below are broken down by weapon and game types, shooter age, and contributing factors in hunting accidents reported in the U. S. and Canadian provinces during 2000.

Weapon Type	Fatal Two-party Incidents	Non-fatal Two-party Incidents	Fatal Self-inflicted Incidents	Non-fatal Self-inflicted Incidents
Shotgun	29	416	7	107
Rifle	31	117	13	103
Bow	3	5	0	6

Game Hunted	Fatal Two-party Incidents	Non-fatal Two-party Incidents	Fatal Self-inflicted Incidents	Non-fatal Self-inflicted Incidents
Deer	38	182	18	125
Dove/Pigeon	3	42	1	9
Turkey (Fall and Spring)	1	74	0	11
Duck/Geese	10	28	0	7
Pheasant	1	78	0	14
Squirrel	1	32	2	30
Rabbit	2	32	1	16

Shooter Age	Fatal Two-party Incidents	Non-fatal Two-party Incidents	Fatal Self-inflicted Incidents	Non-fatal Self-inflicted Incidents
1-9	2	9	1	6
10-19	18	104	4	77
20-29	18	90	4	54
30-39	14	121	6	43
40-49	8	77	3	40
50-59	3	53	4	29
60-up	2	37	3	16
Unknown	0	74	1	5

Hunter Judgment/Skill and Aptitude Factors	Fatal Two-party Incidents	Non-fatal Two-party Incidents	Fatal Self-inflicted Incidents	Non-fatal Self-inflicted Incidents
Failure to Identify Target	25	125	0	0
Victim Covered by Shooter Swinging on Game	6	164	1	1
Victim Moved Into Line of Fire	9	30	0	2
Victim Out of Sight of Shooter	5	102	0	0
Careless Handling of Firearm	9	35	7	106
Shooter Stumbled and Fell	3	13	4	23
Removing/Placing Loaded Firearm in Vehicle	1	10	1	10

Tables adapted from the International Hunter Education Association Annual Report of Hunting and Hunting Related Incidents, [www.ihea.com](http://www.ihea.com)

# Think Before You Climb

A person wearing a hat and jacket is sitting in a tree stand, aiming a rifle. The stand is a metal cage-like structure attached to a large tree. The background shows a dense forest with autumn-colored leaves.

**T**he crisp fall air brings with it one of the most highly anticipated times of the year for many soldiers—hunting season. Whether for recreation or sport, hunting brings many people into the nation's woodlands and forests each year. Unfortunately, not all hunters will leave those woodlands and forests the same way they came in. Some will leave on a stretcher; some by the assistance of a buddy; and some in a body bag. Some will be the victims of shooting accidents and some will fall from tree stands.



Why such a bleak picture? Hunting is actually one of the safer sports going, with far less injuries each year than, say, touch football, Frisbee football, or even your unit's PT program. The truth is, with the exception of a hunter being mistaken for game, most hunting injuries involve needless falling from a height. Twenty-five percent of all gun hunters and more than 80 percent of all bow hunters will hunt from an elevated platform, shooting house, or tree stand this season. Many of these hunters will be soldiers and, unfortunately, a few will be hurt this season for failing to adhere to a few basic tree stand hunting safety tips.

All avid deer hunters no doubt have been spending countless hours in the woods looking for deer sign, selecting hunting locations, poring over topographic maps, and spending a lot of time in stores picking out accessories, ammunition, clothing, and guns. You have cleaned and lubricated your firearm, checked and rechecked the zero at the local range, prepared your hunting clothing, purchased hundreds of dollars' worth of scents and lures, and now you're ready to dig that old tree stand out of the garage and throw it in the back of your pickup truck, right? WRONG!

You would never skip a preflight check of your helicopter or preventive maintenance checks and services on a military vehicle, so why are you willing to climb 25 to 30 feet up a tree in a possibly deadlined tree stand? What is a leading cause of death in South Carolina among males between the ages of 21 and 65? Falling out of tree stands! No one intentionally falls out, but when the excitement of bagging that first buck of the season hits you as you pull the trigger, it is easy to lose your situational awareness and fail to remember that the first step leads straight down 25 feet or more! And, isn't just buck fever or being an eager beaver that does some hunters in. Have you ever fallen asleep while hunting? Well, just imagine falling asleep 25 feet up after a long day of sitting in your stand.

Before you go out hunting this season in a

tree stand, platform, or shooting house, please adhere to the following cautions and safety tips.

If you are using a commercial tree stand, read the instruction manual. If this will be the first time you are using the stand, thoroughly read the instructions and then practice, practice, practice. Start low on the tree and become completely familiar with the features of your stand. You should be able to put the stand up blindfolded—when you go hunting in the wee hours, it will be as dark as if you are blindfolded. If the tree stand is one you've used before, look it over carefully for worn or missing hardware. All tree stands have parts and pieces that could loosen, wear, or even break with extended time and use. You must inspect your stand with every use; an unserviceable stand will fail when you least expect it.

There are essentially three types of tree stands: the climbing tree stand, the chain-on tree stand, and the tripod platform tree stand. Regardless of which type of stand you are using, it is imperative that a high-quality safety harness be used. Do not use any stand without a body harness, body strap, or safety belt. Do not use a body strap, safety belt, or harness that shows any evidence of wear, abuse, deterioration, or damage in any way. When climbing, descending, or sitting stationary in your tree stand, secure your harness so that you will not fall more than 10 to 15 inches to prevent serious chest or internal injuries. If you are using a self-climbing, two-piece tree stand, ensure that the top and bottom pieces are secured by a rope. There is nothing worse than having the lower half of your stand fall away to the ground, leaving you up a tree without a bottom stand to get back down.

Just like a helicopter, tree stands have maximum gross weight limits that are set by the manufacturer. These weight limits are often misunderstood. For example, if you weigh 240 pounds and plan on using a 250-pound rated stand (the most common size), then you stand a pretty good chance of becoming a statistic. The weight rating is

**"What is a leading cause of death in South Carolina among males between the ages of 21 and 65? Falling out of tree stands!"**





absolute and includes all clothing, guns, and accessories that will be in the stand with you. Common sense would dictate that you either lose some weight in a hurry or move up to a larger stand.

If you plan on using an old wooden stand you found nailed to a tree, be aware of the laws in your state about using such stands. In many places, it is forbidden to use a stand that damages the tree underneath the bark. If you elect to use a wooden stand, thoroughly inspect the boards that make up the steps, as well as the platform you will be sitting on, for warped or rotten lumber. If in doubt, don't use the stand.

If you will be using a ladder to climb to the top of your shooting platform or chain-on stand, do not climb with your bow and arrows or gun. This rule also applies for descending back down to the ground. Tie one end of a rope or strap to your belt, and the other to your hunting weapon. Once you are secure at your hunting elevation, pull up your gun or bow. Many a hunter has slipped while climbing a ladder and become a statistic. Bow hunters have fallen on their bow or arrows, impaling themselves, and other hunters have fallen on their firearm or dropped it, resulting in an accidental shooting when the gun discharged. While climbing, keep three points of contact at all times—two feet, one hand, or two hands, one foot—on the ladder. Be wary of wet or cold weather as well as low visibility (sunrise/sunset) when climbing. Do not climb any vertical step (ladder) unless you can keep your body centered over the steps at all times. Do not climb a tree or ladder that is standing in water. The root system may be weak or the ground soft, allowing your ladder to shift or sink. If you are in a metal tree stand and you see lightning, get out of the stand immediately. Other points to consider while climbing include watching for branches and limbs, which could injure your eyes or knock you from the ladder, and watching for hornet nests as you ascend the tree.



Finally, before you head out to the woods this year, please remember that alcohol and drugs do not mix with hunting. Never hunt alone, if possible. If you must go alone, leave a map of where you will be going with a relative and an expected time that you will be back. Nearly everyone has a cellular phone, but if you do not, borrow one. A cell phone could mean not spending agonizing hours injured in the woods waiting for help to arrive. Plan on getting a lot of sleep the night before, eat well, and stay hydrated. Use a little common sense, and always use a body strap or harness. Hopefully, your next hunting trip will be a safe and successful one. 🐾



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## Personnel Injury

### Class A

- Soldier collapsed during a PT run. Attempts to revive SM were unsuccessful.

- Soldier collapsed during PT test. SM was pronounced dead at local hospital following lifesaving efforts.

- Soldier was killed when the handgun he was cleaning accidentally discharged.

- Soldier was participating in PT run when he started having chest pains. Medical aid was summoned, and SM died at the local medical facility.

### Class B

- Soldier collapsed during a three-mile PT run.

- Soldier's finger was severed when his hand made contact with a fan blade on the FMTV he was working on.

### Class C

- Soldier received cuts and lacerations to his right knee while moving a refrigerator to a different floor. SM's injuries required seven stitches.

- Soldier suffered multiple leg fractures resulting from a fall while attempting to cross a one-rope bridge during PT.

- Soldier suffered fractures to his head after falling from a ladder. SM was taking building materials to a rooftop when the ladder he was standing on slipped.

- Soldier received abrasions to her head after collapsing. Collapse was caused by a lack of sleep and panic attack.

- Soldier injured ankle while performing military free-fall operations. SM failed to conduct a proper parachute landing fall with his feet and knees together.

- Soldier received fractures to his back while performing military free-fall operations. SM attempted to conduct a stand-up landing downwind and was not able to adequately slow the forward speed of his parachute.

- Soldier received shoulder and back injuries after falling from an OH-58 helicopter. SM was climbing down from the top side of the aircraft after cleaning the transmission deck and slipped and fell six feet, landing on his right side.



## POV

### Class A

- Soldier sustained fatal injuries when the vehicle he was riding in struck a bridge abutment head-on. The driver of the vehicle, also a soldier, received fractures to his ankle and cuts and lacerations to his head.

- Soldier was killed when his vehicle overturned and rolled several times.

- Soldier received fatal injuries when the motorcycle he was driving collided with

an all-terrain vehicle driven by a civilian.

- Soldier sustained fatal injuries when the vehicle he was driving was struck head-on by another vehicle.

- Soldier was killed when he lost control of the dirt bike he was driving, causing the bike to overturn.

### Class C

Soldier received fractures to his pelvis after his vehicle ran off the roadway and overturned. SM fell asleep while driving and was not wearing a seatbelt.



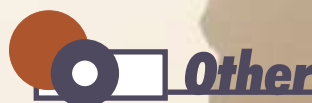
## ACV

### Class A (Damage)

- M1A1 sustained major damage after the engine caught fire during a field training exercise.

### Class A

- Soldier sustained fatal injuries when the M113A3 he was operating as part of a platoon operation fell into a water-filled ditch. SM was pinned inside and pronounced dead at the local hospital.



## Other

### Class A

- Soldier was scuba diving and observed signaling for help. After being located by search and rescue teams, SM was pronounced dead.

# In Memoriam

Army Personnel Killed at the Pentagon  
September 11, 2001

<b>Spc. Craig Amundson</b>	<b>Brenda Kegler</b>	<b>Marjorie C. Salamone</b>
<b>MSgt. (Ret.) Max Beilke</b>	<b>David W. Laychak</b>	<b>Lt. Col. David M. Scales</b>
<b>Carrie Blagburn</b>	<b>Samantha Lightbourn-Allen</b>	<b>Janice Scott</b>
<b>Lt. Col. Canfield D. Boone</b>	<b>Maj. Stephen V. Long</b>	<b>Michael L. Selves</b>
<b>Donna Bowen</b>	<b>Terence Lynch</b>	<b>Maria H. Serva</b>
<b>SFC Jose Orlando Calderon-Olmedo</b>	<b>Teresa M. Martin</b>	<b>Antoinette M. Sherman</b>
<b>Angelene Carter</b>	<b>Ada L. Mason</b>	<b>Don Simmons</b>
<b>Sharon Carver</b>	<b>Lt. Col. Dean E. Mattson</b>	<b>Cheryle D. Sincock</b>
<b>John J. Chada</b>	<b>Lt. Gen. Timothy J. Maude</b>	<b>Lt. Col. (Ret.) Gary F. Smith</b>
<b>Ada M. Davis</b>	<b>Robert J. Maxwell</b>	<b>Patricia J. Statz</b>
<b>Lt. Col. Jerry D. Dickerson</b>	<b>Molly McKenzie</b>	<b>Edna L. Stephens</b>
<b>Amelia V. Fields</b>	<b>Maj. Ronald D. Milam</b>	<b>Sgt. Maj. Larry L. Strickland</b>
<b>Gerald Fisher</b>	<b>Odessa V. Morris</b>	<b>Maj. Kip P. Taylor</b>
<b>Cortez Ghee</b>	<b>Ted H. Moy</b>	<b>Sandra C. Taylor</b>
<b>Brenda C. Gibson</b>	<b>Diana B. Padro</b>	<b>Sgt. Tamara C. Thurman</b>
<b>Ronald F. Golinski</b>	<b>Capt. Clifford L. Patterson</b>	<b>Willie Q. Troy</b>
<b>Diane Hale-McKinzy</b>	<b>Scott Powell</b>	<b>Lt. Col. Karen J. Wagner</b>
<b>Carolyn B. Halmon</b>	<b>Deborah A. Ramsaur</b>	<b>Spc. Chin Sun Pak-Wells</b>
<b>Sheila Hein</b>	<b>Rhonda S. Rasmussen</b>	<b>Meta L. Waller</b>
<b>Maj. Wallace Cole Hogan Jr.</b>	<b>Martha M. Reszke</b>	<b>SSgt. Maudlyn A. White</b>
<b>Jimmie Holley</b>	<b>Cecelia E. Richard</b>	<b>Sandra L. White</b>
<b>Peggie Hurt</b>	<b>Edward V. Rowenhorst</b>	<b>Ernest Willcher</b>
<b>Lt. Col. Stephen Neil Hyland Jr.</b>	<b>Judy Rowlett</b>	<b>Maj. Dwayne Williams</b>
<b>Sgt. Maj. Lacey B. Ivory</b>	<b>Robert Russell</b>	<b>Edmond Young</b>
<b>Lt. Col. Dennis M. Johnson</b>	<b>Chief Warrant Officer William R. Ruth</b>	<b>Lisa L. Young</b>